Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-21. (cancelled)

22. (currently amended) A method for obtaining a stabilized SiO_xF_y fluorine-doped silica thin layer, comprising forming on a SiO_xF_y silicon oxyfluoride layer, a SiO_2 silica and/or a metal oxide protective layer through ion beam-assisted vapor phase deposition, comprising bombarding the layer being formed with a beam of positive ions formed from a rare gas, from oxygen or from a mixture of two or more of such gases, or through cathodic sputtering of a metal or silicon layer followed by an oxidation step of the deposited metal or silicon layer, wherein the beam of positive ions is formed with an ion gun, wherein the silica and/or metal oxide protective layer stabilizes the SiO_xF_y layer, and wherein the stabilized SiO_xF_y layer has a refractive index stable in time.

23. (previously presented) The method of claim 22, wherein the protective layer is 2 to 40 nm thick.

24. (previously presented) The method of claim 23, wherein the protective layer is 5 to 30 nm thick.

25. (previously presented) The method of claim 24, wherein the protective layer is 5 to 20 nm thick.

26. (previously presented) The method of claim 22, wherein the gas used for the ion beam assistance comprises argon, xenon, and/or oxygen.

27. (previously presented) The method of claim 26, wherein the gas comprises argon and xenon.

28. (previously presented) The method of claim 22, wherein the SiO_xF_y layer is 5 to 300 nm thick.

29. (previously presented) The method of claim 28, wherein the SiO_xF_y layer is 30 to 100 nm thick.

30. (previously presented) The method of claim 22, wherein the refractive index of the SiO_xF_y layer ranges from 1.38 to 1.44, for a wavelength of 632.8 nm and at 25°C.

31. (previously presented) The method of claim 22, wherein the SiO_xF_y layer is produced through silicon cathodic sputtering followed by an oxidation step in the presence of a fluorinated gas.

32. (previously presented) The method of claim 31, wherein the fluorinated gas is CF_4.

33. (previously presented) The method of claim 22, further defined as a method of producing an anti-reflection multi-layered coating formed on a substrate, comprising at least one stabilized thin layer coated with a silica and/or metal oxide protective layer.

34. (previously presented) The method of claim 33, wherein the anti-reflection coating is further defined as comprising a stacking of high index (HI) and low index (LI) layers, at least one of the low index layers being made of a thin layer coated with a silica and/or metal oxide protective layer.

35. (previously presented) The method of claim 34, wherein the uppermost layer of the anti-reflection coating is a low index layer made of said thin layer coated with said silica and/or metal oxide protective layer.

36. (previously presented) The method of claim 35, wherein the anti-reflection coating is further defined as comprising four layers in respective order HI/LI/HI/LI starting from the substrate surface.

37. (previously presented) The method of claim 36, wherein the anti-reflection coating is further defined as comprising thicknesses of the layers that vary, in respective order, starting from the substrate surface:

HI: from 10 to 40 nm;

LI: from 10 to 55 nm;

HI: from 30 to 155 nm;

LI (SiO_xF_y layer): from 70 to 110 nm; and

a protective layer: from 2 to 50 nm.

38. (previously presented) The method of claim 37, wherein the thickness of the LI layer closest to the substrate surface is 10 to 45 nm.

39. (previously presented) The method of claim 37, wherein the thickness of the HI layer closest to the SiO_xF_y layer is from 40 to 150 nm.

40. (previously presented) The method of claim 39, wherein the thickness of the HI layer closest to the SiO_xF_y layer is from 120 to 150 nm.

41. (previously presented) The method of claim 35, wherein the anti-reflection coating is further defined as comprising six layers in respective order HI/LI/HI/LI/HI/LI starting from the substrate surface.

42. (previously presented) The method of claim 41, wherein the anti-reflection coating is further defined as comprising thicknesses of the layers that vary, in respective order, starting from the substrate surface:

HI: from 10 to 30 nm;

LI: from 10 to 55 nm;

HI: from 10 to 160 nm;

LI: from 10 to 45 nm;

HI: from 35 to 170 nm;

LI: from 70 to 95 nm; and

a protective layer: from 2 to 40 nm.

43. (previously presented) The method of claim 42, wherein the thickness of the LI layer closest to the substrate surface is from 10 to 45 nm.

44. (previously presented) The method of claim 33, wherein the substrate is an organic glass.

45. (cancelled).

46. (previously presented) The method of claim 22, further defined as a method of making an ophthalmic lens comprising organic glass and an anti-reflection coating comprising at least one stabilized thin layer coated with a silica and/or metal oxide protective layer.

47. (currently amended) A stabilized SiOxFy fluorine-doped silica thin layer coated with a silica and/or metal oxide protective layer, wherein said protective layer has been obtained through ion beam-assisted vapor phase deposition, comprising bombarding the layer being formed with a beam of positive ions formed from a rare gas, from oxygen or from a mixture of two or more of such gases, or through cathodic sputtering of a metal or silicon layer followed by an oxidation step of the deposited metal or silicon layer, wherein the beam of positive ions is formed with an ion gun, wherein the silica and/or metal oxide protective layer stabilizes the SiO_xF_y layer, and wherein the stabilized SiO_xF_y layer has a refractive index stable in time.

48. (previously presented) The thin layer of claim 47, wherein the protective layer is 2 to 40 nm thick.

49. (previously presented) The thin layer of claim 48, wherein the protective layer is 5 to 30 nm thick.

50. (previously presented) The thin layer of claim 49, wherein the protective layer is 5 to 20 nm thick.

51. (previously presented) The thin layer of claim 47, wherein the SiOxFy layer is 5 to 300 nm thick.

52. (previously presented) The thin layer of claim 51, wherein the SiOxFy layer is 30 to 100 nm thick.

53. (previously presented) The thin layer of claim 47, wherein the refractive index of the SiOxFy layer ranges from 1.38 to 1.44 for a wavelength of 632.8 nm and at 25°C.

54. (previously presented) The thin layer of claim 47, further defined as comprised in an anti-reflection multi-layered coating formed on a substrate, the coating comprising at least one stabilized thin layer coated with a silica and/or metal oxide protective layer.

55. (previously presented) The thin layer of claim 54, wherein the anti-reflection coating is further defined as comprising a stacking of high index (HI) and low index (LI) layers, at least one of the low index layers being made of a thin layer coated with a silica and/or metal oxide protective layer.

56. (previously presented) The thin layer of claim 55, wherein the uppermost layer of the anti-reflection coating is a low index layer made of said thin layer coated with said silica and/or metal oxide protective layer.

57. (previously presented) The thin layer of claim 56, wherein the anti-reflection coating is further defined as comprising four layers in respective order HI/LI/HI/LI starting from the substrate surface.

58. (previously presented) The thin layer of claim 57, wherein the anti-reflection coating is further defined as comprising thicknesses of the layers that vary, in respective order, starting from the substrate surface:

HI: from 10 to 40 nm;

LI: from 10 to 55 nm;

HI: from 30 to 155 nm;

LI (SiO_xF_y layer): from 70 to 110 nm; and

a protective layer: from 2 to 50 nm.

59. (previously presented) The thin layer of claim 58, wherein the thickness of the LI layer closest to the substrate surface is 10 to 45 nm.

60. (previously presented) The thin layer of claim 58, wherein the thickness of the HI layer closest to the SiO_xF_y layer is from 40 to 150 nm.

61. (previously presented) The thin layer of claim 60, wherein the thickness of the HI layer closest to the SiO_xF_y layer is from 120 to 150 nm.

62. (previously presented) The thin layer of claim 56, wherein the anti-reflection coating is further defined as comprising six layers in respective order HI/LI/HI/LI/HI/LI starting from the substrate surface.

63. (previously presented) The thin layer of claim 62, wherein the anti-reflection coating is further defined as comprising thicknesses of the layers that vary, in respective order, starting from the substrate surface:

HI: from 10 to 30 nm;

LI: from 10 to 55 nm;

HI: from 10 to 160 nm;

LI: from 10 to 45 nm;

HI: from 35 to 170 nm;

LI: from 70 to 95 nm; and

a protective layer: from 2 to 40 nm.

64. (previously presented) The thin layer of claim 63, wherein the thickness of the LI layer closest to the substrate surface is from 10 to 45 nm.

65. (previously presented) The thin layer of claim 54, wherein the substrate is an organic glass.

66. (previously presented) The thin layer of claim 65, wherein the organic glass comprises an anti-abrasion coating and/or an anti-shock coating.

67. (previously presented) The thin layer of claim 47, further defined as comprised in an ophthalmic lens.

68. (new) The method of claim 22, wherein the SiO_xF_y layer is obtained by bombarding a silicon oxide layer, during its formation by evaporation, by a beam of polyfluorocarbon ions formed by means of an ion gun starting from a polyfluorocarbon compound.